

- 1 1. (Currently Amended) An optical transceiver, comprising:
 - 2 a transmitter comprising a laser diode and a laser driver providing a drive
 - 3 signal to the laser diode and capable to transmit high speed data;
 - 4 a receiver comprising a photodiode and signal recovery circuitry and
 - 5 capable to receive high speed data; and
 - 6 a microcontroller coupled to the said transmitter and receiver and
 - 7 providing a modulated power control current to the laser during an impulse test
 - 8 mode to transmit high optical power signal and monitoring received signals to
 - 9 detect reflections.
- 1 2. (Original) An optical transceiver as set out in claim 1, wherein said transmitter
- 2 and receiver are coupled to same fiber.
- 1 3. (Original) An optical transceiver as set out in claim 1, wherein said modulated
- 2 power control is controlling a laser driver that has modulation and bias power
- 3 control inputs and wherein said microcontroller modulates said bias control input
- 4 during said test mode.
- 1 4. (Currently Amended) An optical transceiver as set out in claim 1, wherein said
- 2 microcontroller modulates said power control signal employing, in addition to the
- 3 laser driver used for the data link, a dedicated transistor for direct high current
- 4 impulse drive of the laser.
- 1 5. (Original) An optical transceiver as set out in claim 1, wherein said receiver
- 2 further comprises a transimpedance amplifier coupled to the photodiode and
- 3 wherein said microcontroller monitors the output of said transimpedance amplifier
- 4 during said impulse test mode.
- 1 6. (Original) An optical transceiver as set out in claim 5, further comprising a
- 2 comparator coupled between the output of said transimpedance amplifier and

3 said microcontroller, for detecting signals at the output of the transimpedance
4 amplifier.

1 7. (Original) An optical transceiver as set out in claim 6, wherein said comparator
2 detection level is controlled during the impulse test mode to be more sensitive
3 than during data transport mode.

1 8. (Original) An optical transceiver as set out in claim 1, wherein the impulse test
2 signal comprise a code sequence.

1 9. (Original) An optical transceiver as set out in claim 1, wherein said
2 microcontroller is capable to detect the code sequence at the output of the
3 comparator.

1 10. (Currently Amended) A method for detection of high optical reflection in a
2 fiber optic network, comprising:

3 a single fiber link whereby data transport in both direction is conducted
4 through the same fiber at the same wavelength; and

5 transmitting an impulse test signal by modulating a laser transmitter using
6 an impulse test transmission mode which is different than a data transmission
7 mode during normal operating conditions; and

8 detecting any received signals modulated using said test transmission
9 mode within a predetermined time period after said transmitting.

1 11. (Currently Amended) A method for fault detection in a fiber optic network as
2 set out in claim 10, wherein said test transmission mode comprises modulating
3 the same laser at a power level above the minimum threshold for normal data
4 transmission.

1 12. (Currently Amended) A method for fault detection in a fiber optic network as
2 set out in claim 10, wherein said test transmission mode comprises modulating

3 the same laser at a frequency substantially lower than during normal data
4 transmission.

1 13. (Original) A method for high reflection detection in a fiber optic network as set
2 out in claim 10, further comprising detecting and measuring the time delay for
3 receiving the reflected test pulse and determining the location of the reflection.

1 14. (Original) A method for fault detection in a fiber optic network as set out in
2 claim 13, further comprising increasing the laser transmitter power during
3 transmission of said short duration test pulse.

1 15. (Original) A method for fault detection in a fiber optic network as set out in
2 claim 10, further comprising increasing the detection sensitivity after the
3 transmission of the said short duration test pulse.